University of Groningen
Seminar Syntax and Semantics (LTX023B10)
prof. dr. C.J.W. Zwart

Correlation is not causation

Reconsidering the interaction between verb raising and morphology

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R.S.S.J. Buurke

Contents

1 Introduction

This exhibition is concerned with the comparison of two current proposals attempting to characterize verb movement to the IP domain, specifically the Split IP parameter (Thráinsson, 1996; Bobaljik & Thráinsson, 1998) and the Rich Agreement Hypothesis (Koeneman & Zeijlstra, 2014). These proposals differ on at least one key assumption. While Koeneman and Zeijlstra (henceforth K&Z) and Bobaljik and Thráinsson (henceforth B&T) assume that morphological affixation is realized post-syntactically (cf. Chomsky, 2001), K&Z assume that morphology can drive the syntax. B&T instead assume obligatory verb movement to the IP domain to be a reflection of a (language-specific) more complex IP structure. If the latter is assumed, morphology can not act as a trigger for syntactic movement. The merits of both proposals are considered in terms of predictive power. The results of this comparison will provide insight to the relation between morphology and syntax, thereby shedding light on the internal makeup of the standard language model.

The first half of this paper can be seen as an extensive introduction to the literature concerned with the relationship between morphology and syntax. Section 1.1 briefly indicates when and why a verb raising parameter was initially proposed, and outlines the Split IP parameter proposal (SIP). Section 1.2 specifies the Rich Agreement Hypothesis (RAH) as implemented by K&Z. Section 2 proposes main diagnostics for testing whether or not a language conforms to either proposal. Diagnostics are proposed for detecting verb raising to the IP domain. Furthermore, paradigmatic richness is defined in terms of K&Z's proposal, and syntagmatic richness is defined in as proposed by B&T. In Section 3 data from four languages is provided, and analyzed through the diagnostics proposed in section 2. Then the feasibility of both proposals is summarized in Section 4.

1.1 Verb movement and minimal IP structure

Natural languages show considerable variation in syntactic structure. A core aim of comparative syntax has been to determine which elements of syntactic structure are universal [1] and which are not. The latter type of elements are by definition language-dependent. These elements are optimally parameters of a binary nature, i.e. either a syntactic pattern is allowed or blocked in a certain language.

1.1.1 Verb movement constraints in English and French

The topic of this paper is the apparent relationship between the degree to which agreement is expressed through morphology and verb raising from the base-generated position of the verb to I (V-to-I movement). The earliest work in this area is usually attributed to Pollock (1989). His seminal analysis in essence considers a grammaticality difference between V_{fin}-Adv and Adv-V_{fin} orders in English and French, as is portrayed by the contrasts in (1) and (2).

[1] It is worth noting that absolute (as opposed to statistical) language universals have been proven difficult to find. Furthermore, if such universals are ascertained, they can only make conspicuous predictions. A useful 'universal' therefore always requires a set of assumptions in order to be informative.

(1) *English*
John often kisses Mary.
*John kisses often Mary.

(2) *French*

a. Jean embrasse souvent Marie.
John kisses often Mary.

b. *Jean souvent embrasse Marie.
John often kisses Mary.

From (1) and (2) follows that the position of adverbs is restricted in these finite constructions. At first glance, these contrasts seem to indicate that the finite main verb must move from its base-generated position out of the VP in French and must remain in base-generated position in English. Another key observation in French regarding infinitives complicates this simple hypothesis. French infinitives can *optionally*[2] move, but generally do not move past negation (see 3a and 3b). Infinitives do, however, move past most adverbs (see 3c and 3d).

(3) a. ... pour ne pas fumer.
... for *ne* NEG to smoke.

b. *... pour ne fumer pas.
... for *ne* to smoke NEG.

c. Souvent paraître triste ...
Often to look sad ...

d. Paraître souvent triste ...
To look often sad ...

These facts force us to conclude that negation (which is assumed to be base-generated lower than IP for reasons of scope) acts as a barrier on verb movement. Assuming that adverbs themselves do not move, it follows that the verb does not move fully to I in these cases. Instead, the verb moves to a head position between IP and VP.

Leaving out the discussion of more complex constructions and the structural status of the doubled negation elements in French, it is evident that verb movement is controlled by or at least related to properties of the IP domain. The exact nature of this relationship has remained a subject of debate. Pollock suggested, following several other observations that are left undiscussed here for reasons of conciseness, that the IP in French is decomposed into several functional categories pertaining to Agreement (AgrP), Tense (TP), and Negation (NegP). This has served as the origin for what has been refined into the Split IP parameter.

1.1.2 The Split IP parameter

(4) *The Split IP parameter (SIP)*
Languages that are [+SIP]-valued have a split IP with separate functional projections for tense (TP) and agreement (AgrP's). [-SIP]-valued languages have an unsplit IP with one combined projection for inflection.

[2]Only *avoir* and *être* infinitives can move, but need not obligatorily move.

A more elaborate specification of the SIP by Thráinsson (1996) has generated considerable subsequent research. B&T then developed the SIP into the form as defined in (4). Essentially, any natural language has either a split IP (6a) or an unsplit IP (6b). Languages with a split IP have more heads and specifier positions, which consequently provides more landing positions for syntactic movement.

(5) *Verb Position Diagnostic*
If V_{fin} is VP-internal in simple[3] finite environments, there are no heads between IP and VP. If V_{fin} is VP-external in simple finite environments, there are no less than two heads in the IP complex. The highest head dominates the lower head(s) and stands in a feature-checking relation with V.

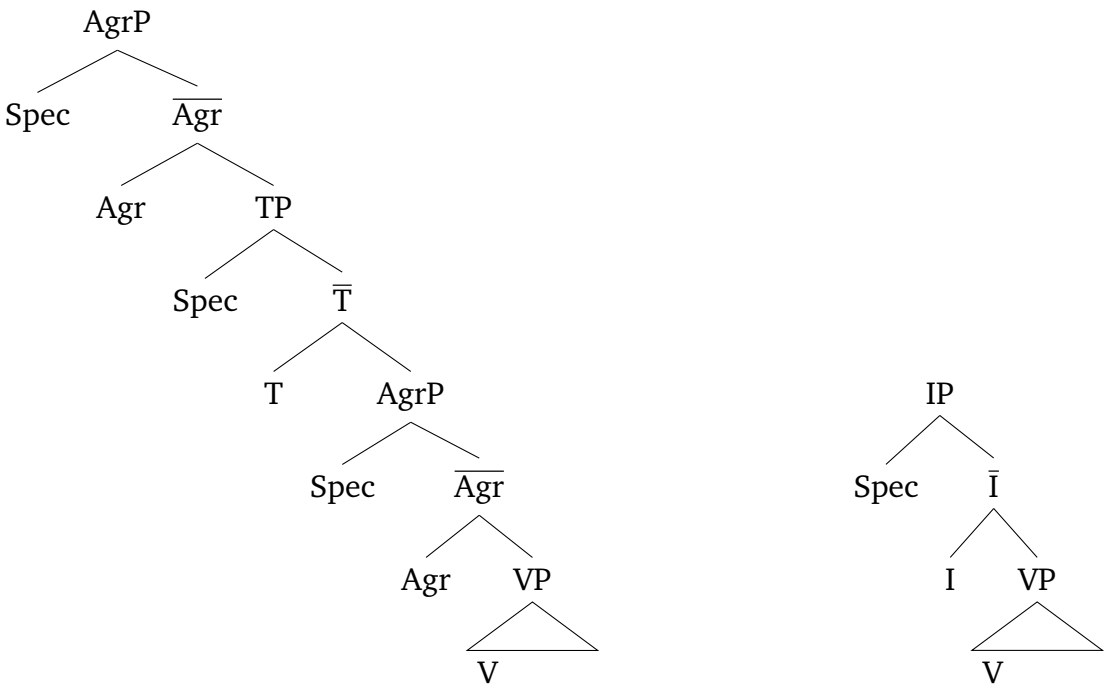
B&T furthermore posit the Verb Position Diagnostic (paraphrased into (5)). If a language raises the finite verb in simple environments, it is expected that the language has a positive value for the [SIP]-parameter. If a language does not raise the finite verb out of VP, the language is presumed to be negatively valued. It should be stressed, however, that this is a one-way implication. As was mentioned earlier, B&T do not assume that morphology can drive syntax. The morphological complexity is therefore a reflection and not a cause of syntactic structure. B&T adhere to the minimalist assumption that syntactic movement happens only as a result of feature checking. In order to include all relevant phenomena, they then follow Groat (1998) and Epstein (1998) in assuming that all local relations are (possible) checking relations and thereby departing from mainstream point of view (Chomsky, 1995). While this important assumption of B&T's theory should be tested thoroughly, the aim of the current paper is to empirically test the predictions of the Verb Position Diagnostic as it stands in the current form. Therefore no further attention is given to this stipulation here.

Note the additional lower functional projection of AgrP in (6a). This is the projection usually termed AgrOP in the literature, but this is misleading as it is often used to explain phenomena other than actual object agreement. Therefore, it is denoted as another AgrP. The reasons for including this projection are numerous, but one important argument is to accommodate the fact that Object Shift (OS), i.e. leftward movement across elements considered to mark the edge of VP, in specifically Icelandic can be applied to full DPs (see, e.g., Thráinsson, 2001). This, compressing discussion as to the exact landing site of OS, requires a position between TP and VP according to B&T.

Furthermore, Chomsky (1991) mentions independent arguments for assuming separate projections for subject and object agreement, which includes a suggestion that there may be languages displaying sufficiently complex morphology (i.e. verbal agreement markers for both subject and object), thereby providing direct evidence for a tripartite IP. These languages are notoriously difficult to find, which is to be expected given the inefficiency of using only morphology to express structural relations between sentential arguments. Furthermore, it is safe to presume that such languages have a highly flexible word order and then it may be questioned whether or not the ordering of the split IP as in (6a) is correct, as verbal arguments may appear asymmetrically. In other words, the subject may be realized structurally closer to the verb, but the subject agreement affix can reasonably be the outer or inner morpheme. Summarizing, there is no reason a natural language should employ such complex verbal morphology and have a sufficiently rigid syntax.

[3]Germanic languages are well known to display V2-effects. Therefore the predictions must be tested in non-V2 contexts.

(6)



(a) IP complex (b) IP simplex

(7)

	ICELANDIC		ENGLISH	
	Present	Past[4]	Present	Past
1SG	heyr-i	heyr-ð-i	listen	listen-ed
2SG	heyr-ir	heyr-ð-ir	listen-s	listen-ed
3SG	heyr-ir	heyr-ð-i	listen-s	listen-ed
1PL	heyr-um	heyr-ð-um	listen	listen-ed
2PL	heyr-ið	heyr-ð-uð	listen	listen-ed
3PL	heyr-a	heyr-ð-u	listen	listen-ed
Infin.	heyra (‘*to hear*’)		(to) listen	

Instead then, B&T give the Icelandic verbal paradigm as an example of (a split IP) language displaying separate morphemes for tense and agreement and contrast it with English in which tense and agreement never appear as separate morphemes (see (7)). These patterns do not provide direct evidence for AgrOP in unmarked constructions. Crucially, however, the parameterization of a(n) (un)split IP essentially remains unscathed (as the parameter is binary in nature) if there is only one ‘extra’ projection in a language displaying a complex IP structure. It is then still possible to distinguish between languages. Consequently, AgrOP will be assumed to a reasonable innovation, thereby keeping in line with mainstream opinion.

B&T test the Verb Position Diagnostic (which will be referred to as simply the SIP in the rest of the paper) for a set of Germanic languages: English, Mainland Scandinavian (MSc; Danish, Norwegian, and Swedish), Icelandic, and two dialects of Faroese. See (8) for examples (with data from Vikner, 1995; Faroese examples are from B&T, as Vikner made no

[4]Note that it is also possible to analyze the tense morpheme as *-ði-/-ðu-* instead of*-ð-*, but this still poses separate morphemes for tense and agreement and therefore the conclusion remains that Icelandic is a split IP language.

distinction between dialect 1 and 2) establishing whether or not a language displays verb movement to the IP domain. From (8) it becomes clear that verb raising to the IP domain is not allowed in English, MSc, and Faroese 2. Icelandic and Faroese 1 cluster together in allowing the finite verb to move past adverbs marking the edge of VP. B&T then proceed to prove the split nature of the IP domain in Icelandic and Faroese 1 by, among others, Transitive Expletive Constructions[5] in Icelandic, DP object shift, and co-occurrence of tense and agreement morphology in verbal paradigms. See section 2.3 for a more elaborate explanation of how these phenomena are analyzed in order to distinguish between (un)split IP languages. The phenomena can then be applied to unattested languages later in this paper and checked against whether or not the language allow verb raising to the (complex) IP domain.

(8) a. *English*
... that John often eats tomatoes.
*... that John eats often tomatoes.

b. *Danish/MSc*
... at Johan ofte spiser tomate.
*... at Johan spiser ofte tomate.

c. *Icelandic*
*... að Jón oft borðar tómata.
... að Jón borðar oft tómata.

d. *Faroese 1*
... at Maria ikki lesur bøkur.
... at Maria lesur ikki bøkur.
'... that Maria does not read books.'

e. *Faroese 2*
... at Maria ikki lesur bøkur.
*... at Maria lesur ikki bøkur.

1.2 Verb movement and minimal pronominal structure

Holmberg and Platzack (1995) have tried to form groups among the Scandinavian languages based on syntactic phenomena. While acknowledging that this is only partially successful due to the substantial variation, they partition the languages into (1) languages expressing subject-verb agreement or not, and (2) languages displaying morphological case assignment or not (excepting pronouns). They also note in their conclusion that there is a noticeable correlation between these parameters: either both parameters are positive or both are negative for a given language. This correspondence has been reformulated several times in order to extend the set of languages to which it applies and has resulted in the formulation of the Rich Agreement Hypothesis (RAH). In general terms the RAH relates morphology to syntactic movement: morphological 'richness' as a stipulation for verb raising to the IP domain.

[5] A construction in which an expletive is followed by a(n active) transitive or unergative verb. See Section 2.3.2 and 3.4 for examples.

(9) *Paradigm-Verb Raising correlate* (Rohrbacher, 1999, p. 116)
'A language has V-to-I raising if and only if in at least one number of one tense of the regular verb paradigm(s), the person features [1st] and [2nd] are both distinctively marked.'

K&Z distinguish two types of RAH: a strong (biconditional) or a weak (one-way) implication. An extensive definition (see (9)) of the biconditional is given by Rohrbacher (1999) and discussed assiduously by Vikner (1995)[6]. Vikner notes that the definition in (9) is sufficient to include the Scandinavian languages, English, French, Yiddish, and Faroese. Nevertheless, Vikner questions how realistic such a specific definition is for language acquisition. Rohrbacher's parameter requires that a child knows the full verbal paradigms of its native language in order to evaluate the V-to-I movement parameter. Vikner, reasonably, considers this to be a major problem and instead proposes that an SVO language allows V-to-I movement depending on whether or not it exhibits distinctive person morphology in each tense. This version of the bidirectional is sufficient to include the same languages as Rohrbacher, but it still leaves something to be desired conceptually. Both definitions seem of an ad hoc nature as they are strictly derived from empirical data and offer no explanation as to why languages display such behavior.

(10) *The Rich Agreement Hypothesis (biconditional version)*
A language has (obligatory) V-to-I movement if and only if the regular verbal paradigm exhibits featural distinctions at least as rich as those of the PNU.

Returning to K&Z, the conceptual framework of the biconditional RAH (see (10)) has improved. Their line of reasoning is as follows. First, an observation is made about core feature distinctions in natural languages, which is that (pro)nominal systems always make at least three distinctions. This is an interesting language universal, first hinted at by Greenberg's Universal 42 (Greenberg, 1963), and distilled into the Person-Number Universal (PNU) by Tvica (2017). The PNU itself, stating that (pro)nominal systems exhibit distinctions between at least three kinds of person and two kinds of number, is supported by studies determining the minimum number of core knowledge systems found in humans (and non-humans), which is summarized in Spelke and Kinzler (2007). The reflection of such systems in natural languages is an intuitively appealing stipulation and solves the conceptual problems of earlier biconditional proposals.

K&Z essentially postulate a formal superfeature [argument], which consists of the features [plural], [participant], and [speaker] (i.e. the distinctions that follow from the PNU). Sufficiently 'rich' languages accommodate [argument], while 'poor' agreement languages do not. [argument] is reflected in syntactic structure by the presence of a *v*P-external functional projection ArgP, headed by [argument]. K&Z propose [argument] is formed if only if the sub-features are all acquired. Acquisition of these formal features can, according to Zeijlstra (2008), only occur through grammatical doubling of *uninterpretable* ([*u*F]) features[7], which is expressed by agreement phenomena. A 'poor' agreement language does, by definition, not exhibit agreement for all three PNU-features, and therefore lacks [argument].

[6]Rohrbacher (1999) is revised version of his 1994 PhD, allowing it to be explored in 1995, but the definition is identical.

[7]K&Z advance that *interpretable* ([*i*F]) features can not be distinguished from semantic features. [*i*F] features are considered to map syntactic items to the LF and PF interfaces.

In terms of syntactic derivation, a 'rich' agreement language contains [*u*argument] as the head of ArgP. [*i*argument] must be checked off during derivation by an element in Spec-ArgP, where the relevant argument is either base-generated or moved to. K&Z also suggest that such a derivation entails that a language with 'rich' object agreement has a *v*P-internal ArgP (and even a *v*P-external and *v*P-internal[8] ArgP in a language exhibiting 'rich' subject *and* object agreement). After checking off [argument] during derivation, the relevant morphemes are then spelled out after syntax. By incorporating this latter stipulation, K&Z interestingly adhere to more modern and mainstream assumptions of the view that morphology is realized post-syntactically. Fundamentally, then, the RAH as proposed by K&Z is mainly a proposal pertaining to language acquisition, and the superfeature [argument] is only derived once, i.e. during early childhood, triggering obligatory verb raising to the IP domain.

(11) *The Rich Agreement Hypothesis (one-way version)*
A language has (obligatory) V-to-I movement if the regular verbal paradigm exhibits featural distinctions at least as rich as those of the PNU.

Recall that K&Z mention two versions of the RAH: a bidirectional and a one-way hypothesis. K&Z reject the latter as 'not strong enough', which is an interesting standpoint in and of itself. The one-way implication is noted in (11). Note that this version implicates 'rich' agreement languages, but leaves room for V-to-I movement in 'poor' agreement languages. While this implication is naturally more likely to be supported by empirical evidence, it is also less interesting from a theory-development perspective as it only provides a weak link between language modules. Presumably for this reason, K&Z attempt to reanalyze language phenomena previously used to disprove the strong RAH (but allowing the weak RAH). Determining how successful they are in this is not an aim of this paper. Instead, expanding the scope of languages for the SIP and comparing it with the validity of the strong RAH is the main goal of this paper. This is done in Section 3.

2 Diagnostics

Some efficient diagnostics are given in the literature to approximate the validity of either the strong RAH or the SIP. These will be summarized in the following subsection. Section 2.1 provides a method of exploring whether or not verb raising to the IP domain is allowed in a language. Section 2.2 summarizes two styles of diagnostics B&T have used to prove the split nature of Germanic languages. Section 3.3 summarizes PNU distinctions and how it serves to determine the richness of agreement for a given language in terms of K&Z.

2.1 V-to-I movement: non-adjacency of V and O

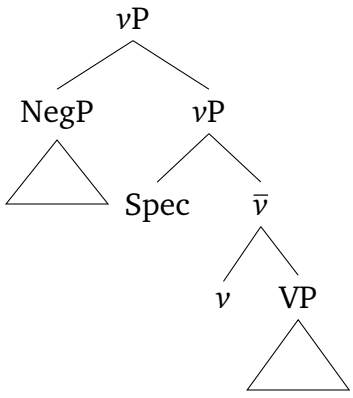
(12) a. <S, V, Adv, O>
b. <S, V, O, Adv>
c. <S, Adv, V, O>

[8]While projections between *v*P and VP are (highly) undesirable for the standard model of grammar, no languages are discussed in this paper that require an alternative account. This remains a problem that should be considered in the future.

d. <Adv, S, V, O>

Tvica (2017) uses adverb (and negation) placement as a diagnostic for determining whether or not the verb has been displaced from its base-generated position. Specifically, if a structure such as (12a) is allowed in a language, i.e. a projection (theoretically this does not need to be an adverb, but it is the most likely) between the VP and its complement, it is assumed that the verb has raised out of *v*P. This successfully distinguishes English and Icelandic, as shown by the grammaticality differences between (8a) and (8c). Orders (12bcd) do not portray a structure in which the verb is (necessarily) dislocated from its complement, which renders them inconclusive in determining verb raising. This is an effective diagnostic as long as adverb placement is relatively flexible and not fixed to clause-initial or clause-final position, which is a reasonable assumption for many languages. Tvica notes that the effectiveness of this diagnostic differs between languages, because languages with an unmarked OV word order only display (12a) in marked constructions (e.g. V2-effects in Germanic languages). This significantly reduces the applicability of the diagnostic, but not decisively so, as SVO is one of the most common word orders in the world.

A few assumptions underlie these diagnostics, which are in line with current views on the status of adverbs. The exact derivation can be found in Tvica[9], but the main assumption is that adverbs head their own projections and are located in *v*P-internal specifier positions (displayed in (13)). This is a common assumption since Cinque (1999). Cinque noted that adverbs seem to be hierarchically structured across languages, thereby doing away with the assumptions that adverbs are adjuncts. While it serves as a safe assumption, it is not universally accepted in the field. Potsdam (1998), for example, notes that the adjunction approach to adverbs more forwardly deals with adverbial iterations such as (14). Cinque's analysis assumes one order is grammatically superior to the other, but this need not necessarily be the case. If adverbs are instead analyzed as unordered adjuncts, it is not necessary to prefer either option in (14). Regardless, as the data used in this study and earlier V-to-I related studies have looked at evidence from basic constructions, Cinque's adaptation is stipulated.



(13)

(14) John will { wisely probably / probably wisely } accept your help.

[9]Assumptions are also made about adverbs with different semantics, and the syntactic status of negation. While these are important, they will not be detailed here for the sake of conciseness.

2.2 PNU distinctions

K&Z (as well as Tvica) stipulate three core features which can be reflected through agreement: [speaker], [participant], and [plural]. [speaker] distinguishes whether or not the speaker of the utterance is included as a semantic referent, i.e. [+speaker] ∋ {1SG, 2SG} and [-speaker] is its complement. Similarly, [participant] distinguishes between referents that are part of the conversation, i.e. [+participant] ∋ {1SG, 2SG, 1PL, 2PL} and [-participant] is its complement. [plural] is the straightforward, and distinguishes between the referent being singular or not, i.e. [-plural] ∋ {1SG, 2SG, 3SG} and [+plural] is its complement.

(15)

	ITALIAN				COLLOQUIAL FRENCH	
	Present	PNU			Present	PNU
		[speaker]	[participant]	[plural]		
1SG	parl-o	+	+	-	parl-[ə]	unmarked
2SG	parl-i	-	+	-	parl-[ə]	unmarked
3SG	parl-a	-	-	-	parl-[ə]	unmarked
1PL	parl-iamo	+	+	+	(on) parl-[ə]	unmarked
2PL	parl-ate	-	+	+	parl-[e:]	marked
3PL	parl-ano	-	-	+	parl-[ə]	unmarked
Infin.	parlare ('to speak')				parler ('to speak')	

The Italian verb paradigm reflects these differences in its morphology, while Colloquial French uses a different mechanism to express these forms of spatial deixis (see (15)). Specifically, K&Z analyze Colloquial French as exhibiting rich agreement through another mechanism. They argue, convincingly so, that the abundant use (approximated around 80%) of clitics in sentences already containing an overt subject should be seen as obligatory subject agreement (see (16)). This analysis implicates French as a pro-drop language, which is deviant from traditional analysis, but it is not impossible either. This case shows that the PNU-analysis does not crucially rely on verbal affixation. Tvica uses a similar analysis to show that Wari' (a Chapacuran language spoken at the Brazilian-Bolivian border of the Amazon) exhibits rich agreement through a set of obligatory clitics. In other words: agreement expressing PNU features is taken in a broad sense. The languages discussed in this paper, however, mostly exhibit their agreement through verbal morphology, thereby making comparison more straightforward.

(16) a. Moi je viens.
I I come.
'I am coming.'

b. Toi tu viens.
You you come.
'You are coming.'

c. Et après elle-la-prend et elle-la-grille.
And afterwards she-it-takes and she-it-grills.
'And afterwards she takes it and grills it.'

2.3 IP architecture

2.3.1 Verbal inflection

B&T's focus on Indo-European languages is understandable given the remarkable adherence to the verb raising raising correlation they exhibit, but it is problematic in terms of diagnosis. Whereas there is an elegant diagnostic for detecting verb raising in a language, this is less straightforward for IP structure. Recall that a split IP language has (1) more specifiers, and (2) more heads available than an unsplit IP language. B&T propose that extra heads, one of which pertains to tense and the other(s) to agreement, are reflected in verbal inflection. In other words, as already noted in section 1.1.2: a split IP is reflected by separate tense and agreement morphemes in (at least one) verbal paradigm. An example of such a paradigm is already given for Icelandic in (7), but the diagnostic proves useful for establishing Faroese (and it successfully excludes Danish) as a split IP language[10] allowing verb raising (see (17) for the paradigms). In this sense they differ from the RAH approach, because tense is directly incorporated. The RAH does not compare *across* tenses and instead looks *within* the paradigm with the most distinctions.

(17)

	FAROESE		DANISH	
	Present	Past	Present	Past
1SG	hoyr-i	hoyr-d-i	hør-er	hør-te
2SG	hoyr-ir	hoyr-d-i	hør-er	hør-te
3SG	hoyr-ir	hoyr-d-i	hør-er	hør-te
1PL	hoyr-a	hoyr-d-u	hør-er	hør-te
2PL	hoyr-a	hoyr-d-u	hør-er	hør-te
3PL	hoyr-a	hoyr-d-u	hør-er	hør-te
Infin.	hoyra (*'to hear'*)		høre (*'to hear'*)	

2.3.2 Non-verbal movement

Similarly to the extra heads in the IP domain of a split IP language, there are, by extension, also extra specifiers in such languages. These are, however, significantly more difficult to discover. Whereas the head of a phrase contains lexicosemantic core information, and is therefore reflected in surface structure, specifiers are flexible and less desirable under minimalist assumptions (e.g. bare phrase structure). Nonetheless, specifiers are considered part of the feature checking domain in checking theory, and are still relevant. Next to this, they are an integral part of B&T's proposal to verb movement in split IP languages, and therefore require specific attention in this paper.

There are no straightforward universal diagnostics or tests for extra specifiers (in the IP domain). The detection of these specifiers hinges on marked and language-specific constructions. B&T accomplish, or more specifically assume, the detection of multiple specifiers through the analysis of DP Object Shift in Icelandic, as portrayed in (18ab), which is not allowed in unsplit languages. DP Object shift moves the full DP from its base-generated *v*P-internal position as complement of the verb across syntactic elements marking the edge of *v*P, such as negation.

[10] In B&T terms: Faroese 1.

B&T then continue by advancing that Transitive Expletive Constructions (TECs), which are assumed to require an extra position in the IP domain, are possible in Icelandic and not in MSc (although this is rejected by the data from Section 3.4). The most stringent evidence of a split IP stems from the fact that with a subset[11] of verbs, the 'associate' of the TEC (essentially the subject of the clause) can only emerge *v*P-externally (see 18cd, evidence from Vangnes, 2002). While these facts present compelling evidence for a split IP, the scarcity of languages allowing TECs only allows for limited pursuit of this diagnostic. Specifically, this diagnostic will only be considered for Swedish in Section 3.4. The other languages either do not allow such constructions or have as of yet not been analyzed sufficiently to detect such constructions (as the result of a less extensive research tradition than is the case for Germanic languages).

(18) a. Ég las ekki þrjár bækur$_i$.
I read.PAST not þrjár bækur.

b. Ég las þrjár bækur$_i$ ekki t$_i$.
I read.PAST three books.pl$_i$ not t$_i$.
'I did not read three books.'

c. * Það hefur étið einhver köttur mýsnar.
EXPL has eaten some cat mice-DET.

d. Það hefur einhver köttur étið mýsnar.
EXPL has some cat eaten mice-DET.
'Some cat has eaten (the) mice.'

3 Selected languages

This sections is concerned with applying the diagnostics established in Section 2 to language data. A substantial part of the data comes from (partially) reanalyzing Tvica's 2017 thesis. Specifically, the following languages are considered: Finnish (Section 3.1), Kaqchikel (Section 3.2), and Hausa (Section 3.3). As will be seen, each of these languages is rich in terms of both proposals, which predicts verb raising to the IP domain on account of both proposals. These type of languages are most interesting for teasing apart predictions of the RAH and SIP. Furthermore, new and unique evidence from Swedish (which is traditionally analyzed together with Danish and Norwegian) concerning Transitive Expletive Constructions will be considered in Section 3.4.

3.1 Finnish

Finnish is a language from the Finnic ($\in$ Uralic) language family. This sets Finnish apart from the Scandinavian and Germanic languages that are the usual subject of the SIP and RAH. Finnish employs extensive case morphology (see the examples in (19)) on nominal DPs, which agrees with the verb. The exact nature of this case system is a subject of debate (see e.g. Kiparsky, 2001), but the core conclusion is that there is in fact agreement. Furthermore,

[11] Specifically verbs with an agentive associate and a theme object.

agreement is also expressed on non-nominal and non-verbal elements. Specifically, negation is expressed through an inflected 'negation verb' (see (19bc) and (20)).

(19) a. Pekka tapasi Merjan.
Pekka.NOM meet.past.3SG Merja.ACC.
S **V** **O**
'Pekka met Merja.'

b. Minä en lukenut kirja-a.
I NEG.1SG read.SG book-PAR.
'I did not read the book.'

c. Me emme lukeneet kirja-a.
We NEG.1PL read.PL book-PAR.
'We did not read the book.'

d. Minä luin eilen kirja-n.
I read.1SG yesterday book-ACC.

e. * Minä eilen luin kirja-n.
I yesterday read book-ACC.
'I read the book yesterday.'

f. Minä en ostaisi sitä kirja-a.
I NEG.1SG buy.COND that book-PAR.
'I wouldn't buy that book.'

(20)

FINNISH

	Present	Past	Negation
1SG	puhu-n	puhu-i-n	e-n
2SG	puhu-t	puhu-i-t	e-t
3SG	puhu-u	puhu-i-[∅]	ei-[∅]
1PL	puhu-mme	puhu-i-mme	e-mme
2PL	puhu-tte	puhu-i-tte	e-tte
3PL	puhu-vat	puhu-i-vat	ei-vät
Infin.	puhua ('*to speak*')		

Presented with these facts, the following can be concluded about Finnish. The unmarked word order is SVO (see (19a)), although Holmberg (2000) disputes the degree to which Finnish is a mixed order language, as it also frequently displays SOV order. While not immediately a problem for the diagnostics, the conclusion that can be drawn from them is weaker if a language consequently exhibits a word order in which detecting verb raising is impossible. Importantly, adverbs can intervene between the verb and its complement in the SVO order, which indicates that verb raising out of *v*P is possible (as shown by the grammaticality contrast in (19de)). Finnish is morphologically rich in terms of the RAH, as confirmed by the inflection of the negation verb reflecting [speaker], [participant], and [plural] (in contrast with V_{fin}, which only marks number). The RAH is therefore confirmed by these Finnish data.

Taking the verbal paradigm in (20) into full scope, it becomes clear that tense and agreement are realized separately in the past tense, which is formed by the stem of the verb suffixed

by respectively the past tense marker -i- and the agreement markers. This pattern serves as an indication that Finnish has a split IP in which inflectional morphemes are assumed to be realized as separate heads, thereby confirming the Verb Position Diagnostic, and the SIP. Note also the asymmetry in agreement between the negation and verb in (19e). Holmberg and Nikanne (1993), from which (19e) is taken, argue that the conditional expresses both tense and mood. Therefore the negation exhibits only subject agreement, which differs from the agreement on the verb. Holmberg and Nikanne argue that these facts strongly posit Finnish as a split IP language. Concluding, then, Finnish supports the predictions of the RAH as well as the SIP.

3.2 Hausa

Hausa is a West-Chadic ($\in$ Afroasiatic) language with the highest number of speakers of the family. It is spoken in most of Western Africa, including Niger and Nigeria, and is the lingua franca of the region. The language exhibits rigid SVO orders, which is portrayed in (21). These examples are taken from Jaggar (2001).

(21) a. (*ní) nā tayà Tankò baƙin cigì.
I 1.SG.PF help Tanko unhappiness.
S **PAC** **V** **O**
'I consoled Tanko.'

b. (*sū) zā sù gyāra mōtàřsà.
They FUT 3.3PL fix car.of.3.M.
S **PAC** **V** **O**
'They will fix his car.'

c. Yārònā yā sakà rĩgā cikin àkwàtì.
Boy.of.1SG 3SG.M.PF put gown inside box.
S **PAC** **V** **O**
'They will fix his car.'

Note the contrast between (21a) and (21b). In (21a) the PAC consists of one phonological morpheme expressing both tense and person features, while in (21b) the PAC consists of two separate phonological morphemes for tense and subject agreement. The coordinated PAC morphemes can not be moved away from one another, which indicates that the morpheme responsible for subject agreement is not a free pronoun (and note also that insertion of a free pronoun is ungrammatical). This 'weak pronoun' obligatorily co-occurs with nominal subjects. This 'Person-Aspect'-Complex (PAC) consists of (1) a morpheme expressing subject agreement, and (2) a morpheme expressing tense, aspect, or mood (TAM). While these morphemes can be fused into a portmanteau morpheme, all the relevant features are still in agreement between arguments. Clearly, then, Hausa is a rich agreement language reflecting PNU features (see the (simple) perfective paradigm in (22)) in the PAC.

(22)

HAUSA

	Masculine	Feminine
1SG	nā	nā
2SG	kā	kin
3SG	yā	tā
1PL	mun	mun
2PL	kun	kun
3PL	sun	an

(23) Sulè bài mā fadà wà màtaɾ̃sà ba.
Sulè NEG.3.SG.M PART tell his wife NEG.
S PAC V O
'Sulè did not even tell his wife.'

However, it is allowed to insert material, such as a particle in (23), between the PAC and the verb, which indicates it is not phonologically dependent on the verb. As a consequence, it must be assumed that PACs attach to non-verbal elements. Tvica suggests that these elements are *v*P-external, and verb raising is therefore unexpected in Hausa (following the RAH predictions). It must then be checked if any elements can be inserted between the verb and its object.

(24) a. Kandè tā ɗan tàimàkē nì.
Kandè 3SG.F.PF a.little help me.
S PAC Adv V O
'Kandè helped me a little.'

b. Sulè (mā$_1$) bài (mā$_2$) fadà wà (mā$_2$) màtaɾ̃sà (mā$_2$) ba (mā$_3$).
'Sulè too did not tell his wife.'$_1$
'Sulè did not even tell his wife.'$_2$
'Sulè did not tell his wife even.'$_3$

c. Mun kāwō (*fa) sù.
1PL.PF bring PART them.
'We brought them.'

Most adverbs appear either at the beginning or at the end of a clause, thereby rendering them ineffective as non-adjacency diagnostic for verb raising. A smaller set of adverbs can surface between the subject and verb, such as in (24a), but this pattern is not useful for establishing verb raising and only shows that a verb has not moved beyond the *v*P boundary. Tvica argues this corroborates the RAH, but this is not truly the case. That the verb is within the *v*P boundary can equally mean that the verb has not moved from its base-generated position in the first place. Instead, it must be shown that the verb explicitly moves but stays *v*P-internal. There is no reason to assume this is true.

There is a small set of elements that can surface between the verb and its complement. These (modal) particles, see (23) and (24b), are of a highly flexible nature. While these elements can indeed break up the structure of the verb and its complement, they can not do so if the object is a pronominal clitic. Furthermore, it should be noted that such particles[12] are

[12]This small group consists of the following particles: *fa*, *dai*, *kúwa*, *kuma*, *mā*, and *kàm*.

mostly used for pragmatic goals, which leads to the question of their exact syntactic nature. This paradoxical nature of the particles allows for a broad interpretation of them in terms of diagnosis. One the one hand, the particles seem to be so flexible that it is unsure whether or not they should be analyzed at syntax level. On the other hand, the particles seem to be syntactically embedded, because they are (not) allowed between a verb and elements that are syntactically variant, i.e. pronominal clitics and full arguments.

Recall that the only reliable diagnostic for verb movement is non-adjacency of the verb and its object. The question arises whether or not the particles actually displace the verb at the level of syntax. Consider the different meanings of the sentence in (24b). While the implications of each sentence differ notably, it seems to be mostly a case of pragmatic presuppositions. In the first meaning, the topic of the conversations seems to be that at least two people have kept secrets from their wives, and one of them is Sulè. This variant is clearly different from the second and third meaning, because for them presumably only Sulè is the topic of the conversation. However, it can be concluded that the first meaning is due to it being in a focus position. This conclusion is corroborated by the fact that the second and third meaning barely differ from each other, even on a pragmatic level. Interpreting the evidence this way forces us to conclude that the verb and its object can not be broken up by the (according to Tvica) abundantly used particles of Hausa. Contrary to Tvica, then, it must be concluded that evidence from Hausa does not support the strong RAH, as this rich agreement language does not obligatorily raises the verb out of *v*P.

Turning to the SIP, these data require careful consideration. Note that in the absence of specific marked constructions, the only available diagnostic (as proposed by B&T) is the existence of separate morphemes for tense and subject agreement. Recall that Hausa expresses a (portmanteau) morpheme that expresses, tense, aspect, and mood. Interestingly, however, there are no examples in Tvica that show expression of what has traditionally been considered tense. Presumably for exactly this reason, i.e. cross-linguistic validity of split IP, Bobaljik (2002) notes that there must be systematic occurrence of separate morphemes (that are base-generated in the IP domain), and does not stress that it must be specifically tense and subject agreement. Furthermore, Newman (2000) posits that the PAC is 'comparable to INFL in general theoretical linguistic terminology' (p. 719, chapter 78). Therefore, Hausa is to be considered a split IP language. Hausa, in effect, also presents an empirical problem for the SIP. B&T's theory to verb raising has little predictive power, as it allows for verb raising in language with poor agreement, but the prediction that in a language with a split IP the verb must raise to the IP domain in order to check its features also breaks down. Hausa data therefore present a substantial problem to both theories. Unless it can be proven that the Hausa IP is unsplit or displays poor agreement, which is highly unlikely given the impossibility of displacing elements of the PAC or reanalyzing its nature, it must be concluded that both theories are making predictions that are not upheld by empirical evidence.

3.3 Kaqchikel

Kaqchikel is spoken in Guatemala, and is classified as a Quichean ($\in$ Mayan) language. It is an absolutive-ergative language exhibiting rich agreement through prefixes on the verb. Transitive and intransitive predicates are marked with different prefix. The full set of agreement prefixes, as adapted by Tvica (p. 224), is noted in (25). Clearly, the Kaqchikel verbal paradigm exhibits the PNU features.

(25)

KAQCHIKEL

	Intransitive	Transitive
1SG	yi-	nin-
2SG	ya-	na-
3SG	n-	nu-
1PL	yoj-	nqa-
2PL	yix-	ni-
3PL	ye-	nki-

Languages from the Mayan language family almost all have verb-initial word orders in unmarked cases, which is found in a minority of languages in the world. Kaqchikel follows this pattern, but exhibits ambiguity when the verbal arguments are equally 'definite'. In other words: if both DPs are definite or if both are indefinite, each argument can be either subject or object. When the definiteness is not equal, the definite argument is the subject and follows the object (resulting in VOS). Next to verb-initial word orders, Kaqchikel also displays SVO orders when the subject is indefinite (and the object either definite or indefinite). This complex word order pattern is summarized in (26).

(26)

S	O	VOS	VSO	SVO
def.	def.	✓	✓	✓
indef.	indef.	✓	✓	
def.	indef.	✓		
indef.	def.			✓

(27) a. Iwir ri tz'i' x-r-oqotaj ri me's.
Yesterday the dog COMPL-3SG.ERG-chase the cat.
Adv **S** **V** **O**

b. Ri tz'i' iwir x-r-oqotaj ri me's.
The dog yesterday COMPL-3SG.ERG-chase the cat.
S **Adv** **V** **O**

c. Ri tz'i' x-r-oqotaj iwir ri me's.
The dog COMPL-3SG.ERG-chase yesterday the cat.
S **V** **Adv** **O**

d. * X-r-oqotaj iwir ri tz'i' ri me's.
COMPL-3SG.ERG-chase yesterday the dog the cat.
V **Adv** **S** **O**

e. * X-r-oqotaj ri tz'i' iwir ri me's.
COMPL-3SG.ERG-chase the dog yesterday the cat.
V **S** **Adv** **O**

'The dog chased the cat.'

The distribution of adverbs is displayed in the examples in (27). Interestingly, adverbs can intervene between the verb and its object in the SVO order. This is not allowed in the verb-initial orders. In short, if the subject is indefinite and precedes the verb, there is evidence that

verb raising out of *v*P is possible. It is worth noting how limited the scope of this analysis is, however. Tvica concludes that the SVO order is derived from the verb-initial orders and that it can not ascertained that verb movement is a sole consequence of agreement. Instead, Tvica argues there are two ways to arrive at the 'unmarked' word orders: by (1) adopting remnant VP-movement (which effectively carries the direct object across the subject) resulting in VOS, or (2) verb movement to the front, which results in VSO. Since it is impossible to unify both orders under one type of movement, Tvica argues that both are available and required.

Recall that it was noted in section 2.1 that OV languages are excluded from the scope of the non-adjacency diagnostic for V-to-I movement. The case of Kaqchikel proves how difficult it is to analyze V-to-I movement in (essentially) languages not exhibiting unmarked SVO orders. Despite the fact that SVO (with adverbs between V and O) orders are possible, the resulting analysis is inconclusive. Alternatively, then, it is more parsimonious to abandon the key underlying assumptions of Kayne's (1994) proposal that all non-SVO languages are derived. Instead, following Rohrbacher (1994), VOS can also be assumed to be the underlying order, which is supported by the fact that it is the most abundant order in (26)[13].

In terms of the current comparison, however, the latter assumption crucially posits Kaqchikel as a language in which the non-verbal elements move instead of the verbs. This must be the case, unless the standard stipulation of strictly leftward movement is discarded, and this is undesirable in the very least. The strong RAH is, due to its bidirectional nature, to be considered inadequate in light of the evidence. Even if verb movement can be evidenced in a verb-initial language, it is doubtful that it can be proven to be the result of agreement or follows the derivation proposed by K&Z.

Naturally, the SIP can not be confirmed or rejected by Kaqchikel either. Even though the IP can be presumed to be split due to the separate morphemes for aspect[14] and subject agreement, there is no way of determining whether the verb checks off its features in the IP domain. The only valid conclusion is then that Kaqchikel must be considered unsuitable, contrary to Tvica's envisioning, for testing verb raising hypotheses.

3.4 Swedish

Swedish is a North Germanic ($\in$ Indo-European) language. The languages discussed above are non-Indo-European, which were not part of the traditional discussion of the correlation between verb raising and morphological complexity. New corpus data has, however, rekindled interest of this specific language for the tenability of the SIP. First Swedish will be analyzed in terms of the RAH, however, for sake of consistency.

[13]Furthermore, it is reasonable to assume that definite subjects with indefinite objects are more common in natural languages than the inverse. This is conjecture, naturally, but again is accommodated by the patterns found in (26) if correct.

[14]Note that Kaqchikel displays no overt realization of tense, however. Regardless, in line with the analysis of the Hausa TAM morpheme, aspectual morphemes are taken as projecting their own syntactic category in the IP domain.

(28)

SWEDISH

	Present	Past
1SG	hör	hör-de
2SG	hör	hör-de
3SG	hör	hör-de
1PL	hör	hör-de
2PL	hör	hör-de
3PL	hör	hör-de

(29) a. Han köper boken.
He buys book-the.
'He buys the book.'

b. ... att Ulf inte köpte boken.
... that Ulf not buy.PAST book-the.
'... that Ulf did not buy the book.'

In the absence of alternative analyses, e.g. richer verbal paradigms than the ones presented, it can be concluded that Swedish morphologically poor, because it shows no verbal inflection at all (see (28)). Similar to English, Swedish exhibits unmarked SVO orders in both main and dependent clauses (see (29)). Furthermore, the verb does not rise past *v*P edge markers such as negation (in dependent clauses, to account for V2 effects). These facts support the strong RAH[15].

Swedish is usually syntactically clustered in the Mainland Scandinavian (MSc) group (usually to distinguish it from other Germanic languages or the 'Insular Scandinavian' group, i.e. Icelandic and Faroese), but this can be considered too great a simplification. As mentioned earlier, Platzack and Holmberg (1995) noted that there is much syntactic variation in the MSc group still unaccounted for even after meticulously mapping i.a. verb second phenomena, verb raising, object shift, double object constructions, morphological case marking, and null subjects. Furthermore, new evidence is put forth by Håkansson (2017), suggesting that Transitive Expletive Constructions (TECs) are possible in Swedish. This forces a reanalysis of B&T's conclusion that Swedish, Danish, and Norwegian do not have a split IP. If Swedish in fact displays TECs, then it must be concluded there is empirical evidence against the SIP.

(30) a. *Afrikaans*
Daar het baie mense baie bier gedrink.
EXPL has many people much beer drunk.
'Many people have drunk much beer.'

b. *English*
* There has someone eaten an apple.

[15]Most readers of this paper will be familiar with the problematic nature of analyzing Scandinavian dialects. Älvdalen Swedish, for example, does allow for verb raising out of *v*P. While this is an important phenomenon to account for, discussing proposals for analyzing this will distract from the core of this section.

c. *Danish*
* Der har nogen spist et æble.
EXPL has someone eaten an apple.

d. *Icelandic*
Það hefur einhver borðað epli.
EXPL has someone eaten apple.

e. *Dutch*
Er heeft iemand een appel gegeten.
EXPL has someone DET apple eaten.

f. *German*
Es hat jemand einen Apfel gegessen.
EXPL has someone DET apple eaten.
'Someone has eaten an apple.'

(31) a. *EM Swedish*
Thet rådha wel andre Herrar offuer oss vtan tigh.
EXPL rule probably other masters over us besides you.
'Other masters probably rule over us besides you.'

b. *LM Swedish*
Det köper inte många sina kläder så billigt som hon.
EXPL buy not many their clothes as cheaply as she
'Not many (people) buy their clothes as cheaply as she does.'

c. *Colloquial Swedish*
Det har väl alla barn gjort något.
EXPL have surely all children done something.
'Surely all children have done some [mischief].'

d. Det tordes ju inte en sjuksköterska gå och säga till en doktor.
EXPL dared PART not a nurse walk and tell VPL a doctor.
'A nurse did not dare to tell a doctor.'

See (30) for a list of attested Germanic languages allowing or barring TECs (mostly data from Richards, 2006, and Håkansson). Diachronic (from Early Modern and Late Modern Swedish) and synchronic evidence for availability of TECs in Swedish is shown in (31). Håkansson reviews the literature on TECs, and observes that languages allowing for TECs are assumed to license TECs through other phenomena, such as verb raising or verbal agreement. Håkansson instead argues that TECs need not be licensed by syntactic factors, and instead depend on the lexical inventory of expletive pronouns. Specifically, Håkansson claims Colloquial Swedish has two different kinds of expletives that merge in different positions: one as the specifier of CP, i.e. topic, and the other as the specifier of *v*P, i.e. subject. The difference between earlier forms of Swedish and modern Colloquial Swedish is that the older CP-expletives have not entirely been replaced by the more (restricted) *v*P-expletives. This analysis accounts for (1) why TECs are more restricted in Colloquial Swedish than in, for example, Icelandic, and (2) the conflicting findings with earlier studies. Furthermore, it may explain the striking finding of (32), as discovered by Håkansson, that Swedish (variants) may even be more flexible in

the kind of associates allowed in TECs than Icelandic, which does not allow definite associate subjects as freely as Swedish.

(32) a. *Icelandic*
* Það hefur Elsa skreytt jólatréð sitt fyrir löngu síðan.
EXPL has Elsa decorated Christmas.tree her for long since.

b. *Swedish*
% Det har väl Elsa klätt sin julgran för längesen.
EXPL has PART Elsa dressed her Christmas.tree for a.long.time.ago.
'Elsa surely decorated her Christmas tree a long time ago.'

The fact that Swedish allows TECs, although to a limited degree, presents a problem for the theory of verb raising as proposed by B&T. The exact nature of the limitations is beyond the scope of this paper, and is still an active discussion for Icelandic TECs (even though their existence has been undisputed). More important is the fact that B&T's proposed derivation for TECs, i.e. requiring a split IP, is inadequate. Recall the predictions that follow from B&T's theory: an unsplit IP language can not raise to I, because the syntactic head of that domain is already filled. A split IP language must raise V to the IP domain, however, in order to check its features against features of T in a local domain. Swedish does not allow verb raising, but exhibits constructions licensed by a split IP. Therefore, this new evidence for Swedish corroborates the RAH, but not the SIP.

4 Discussion

4.1 Reconsidering verb movement

(33)

	V-to-I	PNU	Split IP	RAH	SIP
Finnish	✓	✓	✓	✓	✓
Hausa	×	✓	✓	×	×
Kaqchikel	incon.	✓	✓	incon.	incon.
Swedish	×	×	✓	✓	×

At the lookout of this paper the observation was reiterated that, for many Germanic languages at least, there seems to be a correlation between morphological complexity and the phenomenon of verb raising to the IP domain. Two well known proposals from the literature, i.e. the Rich Agreement Hypothesis (Koeneman & Zeijlstra, 2014) and the Split IP approach to verb raising (Bobaljik & Thráinsson, 1998), were taken into scope. The RAH makes a two-way prediction between rich morphology and verb raising: a language exhibits verb raising if and only if it exhibits rich agreement morphology. The inverse is also predicted: a language displaying insufficient overt agreement is predicted to not allow verb raising to IP. The SIP has significantly less predictive power: verb raising to IP is optional in poor agreement languages (as expressed by having an unsplit IP domain), but such verb raising is obligatory in a language exhibiting multiple inflectional morphemes for reasons of local feature checking. For each proposal diagnostics were established and tested for a set of non-Indo-European

languages: Finnish, Hausa, and Kaqchikel. Furthermore, new evidence from Swedish, a language which has traditionally been analyzed as exhibiting the same syntactic patterns as Danish and Norwegian, was taken into consideration. The validity of both proposals are discussed in light of the evidence, and the results are summarized in (33).

Considering the RAH, it seems that the bidirectional predictions can not be successfully confirmed. Swedish and Finnish support the predictions set out by K&Z by barring and allowing verb raising to IP, while respectively exhibiting poor agreement and rich agreement. Kaqchikel has previously been analyzed by Tvica (2017) as portraying *derived* verb-initial standard word orders. These verb-initial orders (VOS or VSO) are dependent on the definiteness of the verbal arguments. Tvica attempted to account for both verb-initial orders by assuming either remnant VP movement or verb movement, but failed to establish one type of movement as the correct one. The undesirable status quo was discarded and instead it was assumed that the verb-initial word orders were, in fact, not derived. As a result, Kaqchikel can not be tested for verb raising out of VP and is rendered inconclusive for both the RAH and SIP.

Turning to Hausa, the validity of relating verbal morphology to verb raising in general is to be questioned. Hausa is a rigid SVO language and exhibits rich agreement through a preverbal complex of morphemes. Crucially, however, the language does not allow the verb and object to be separated syntactically, and therefore provides no indication for verb movement. One group of flexible modal particles can occur between the verb and object, but also practically anywhere else. Following a description of these particles as having a pragmatic goal, and having little compositional value, it is concluded that they play no role in narrow syntax. Hausa is consequently a language exhibiting no verb raising to the IP domain, but exhibiting abundant agreement. Both proposals then fail to be upheld.

Another interesting addition to the discussion is that the RAH is not necessary an extension to the SIP in terms of predictions. Bobaljik (2003), but also K&Z, seem(s) to posit the SIP as a one-way 'alternative' version to the RAH. There is now, however, a case in which the RAH makes correct predictions, while the SIP predictions are in fact incorrect. Specifically, Colloquial Swedish exhibits phenomena (i.e. Transitive Expletive Constructions) that require a split IP in B&T's terms. A split IP requires verb movement for local feature checking, but Swedish has been attested to not display verb raising to the IP domain. Empirical evidence against the SIP and allowing the strong RAH is rare, but not unprecedented[16]. The case of Swedish is unique, however, in that it falls under the more restricted diagnostic of a split IP (i.e. allowing split IP licensed constructions), but thoroughly fails the more lenient diagnostic (i.e. separate morphemes for tense and agreement).

4.2 Retaining a link between morphology and syntax

We are then seemingly left with no proposal relating verb movement to morphological structure. This is an undesirable status quo, because a direct or indirect link between morphology and syntax provides substantial exploratory power across the field of linguistics. This paper is in no way an attempt to close the door on analyzing the relationship between morphology

[16]Faroese 2 (see (8)) displays no verb raising to the IP domain, but displays separate morphemes for tense and agreement if the past tense is analyzed as 'verb stem + ð+ i/u'. Bobaljik proposes instead that the past tense should be analyzed as 'verb stem + ði/ðu'. K&Z note that then the same can be argued for Icelandic, which renders the clearest example of a split IP/rich agreement language suddenly poor.

and syntax, but there are a few important points to be made for continued research in the field. Focusing on the one-way prediction, which is most likely to succeed, the approach considered here was the SIP.

One manner in which the current analysis can be amended is by redefining diagnostics of the SIP. Specifically, Hausa provide evidence against the SIP as it exhibits aspectual morphology next to subject agreement, and therefore it is established as a split IP language. In B&T, in contrast with later work, the assumption was that tense and agreement morphology provides an indication of multiple heads in the IP domain. However, examples of Hausa expressing tense, as opposed to the abundant expression of aspect, are hard to find. Hausa can be accounted for if aspectual morphology is considered part of a non-IP domain. Kempchinsky (2000), for example, proposes that aspectual phrases can be analyzed as 'event phrases' that project within the VP domain. It is reasoned that aspect differs from tense in the sense that aspect is part of the meaning of a verb, and therefore partially comes directly from the lexicon. Along the same line of thinking, it can be argued that aspect must in fact be processed at the level of semantics and is therefore insensitive to argument structure. If this view is followed, Hausa is no longer a split IP language, and therefore correctly need not display verb raising to the IP domain.

Another valid point of discussion is the constrained checking domain that B&T have assumed. While the mainstream opinion is more conservative as to which relations in phrasal structure are relevant for feature checking, B&T assume that all local relations to a head are possible checking relations. Enforcing such stipulations causes a verb to raise to the IP domain in a split IP language, in order to successfully check its feature with T. This assumption is also considered by K&Z, but it is rejected without an actual argument. They merely mention that it not straightforward why feature checking can not occur across phrasal heads. Several answers are possible, but one possible argument is that it is attractive in terms of minimalist assumptions. If feature checking can only occur between (very) local elements, it condenses the set of necessary operations and stipulations within narrow syntax. Specifically, the syntactic derivation of (semantically) complex sentences becomes more intuitive if it resorts more extensively to simply copying features throughout successive iterations of Merge, and features are checked as a direct function of Merge (or a similar operation). Given this conceptual merit, it is an attractive proposal. It is true, however, that it still needs a more elaborate description. This is left as a subject for future research.

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